

Rainy Days.—The number of days on which rain fell during the month varies from 11 to 17 in New England; 10 to 18 in the Middle States; 9 to 21 in the Southern States east of the Mississippi; 9 to 13 in the Southwest; 9 to 18 in the Lake region; 14 to 17 in the Ohio valley; and 8 to 15 in the Northwest.

Fog.—Fog has been frequent only on the coast of New England and at San Francisco.

Heavy Rains are reported as follows: Baltimore, 3.14 in. on the 30th; Charleston, 4.87, 16th, and 3.01, 24th; Dubuque, 4.55, 5th; Keokuk, 5.28, 4th and 5th; New Haven, 7.15, 30th and 31st; Newport, 3.45, 23d; Savannah, 3.56, 24th and 25th; Tybee Island, 4.50, 30th; Washington, 4.12, 30th; Southington, Conn., on 30th and 31st, 4.10; Middletown, Conn., on 30th and 31st, 5.75; Riley, Ill., 10th, 3.50; near Independence, Iowa, heavy rain on 4th, damaging railroads, &c.; Ames, Iowa, 1.66 in one hour, 4th; Stanley, Kan., wind and rain-storm 28th, damaging crops, fruits, &c.; Mendon, Mass., all the rain of month, 5.40, fell on 23rd, 30th and 31st; Worcester, Mass., from 3:46 p. m., 30th, to 7 a. m., 31st, 4.55; Waltham, Mass., 4.04 during 24 hours ending 3:40 p. m., 31st; Wet Glace, Mo., 3.90, 12th, and 3.40, 15th; "cloud bursts" in Nevada, at Gold Hill, 22nd and 24th, Genoa 20th, Eureka, 24th; Snowville, Va., 4.7 on 21st, causing damaging floods.

Snows.—Snow occurred at Pike's Peak on the 14th, 15th and 18th; Mt. Washington, 25th and 26th. Carson City, Nev., snowing on mountains on 7th.

Drought.—Rain needed at Mt. Desert, Me., 21st; drought, May 10th to July 22d, Fall River, Mass.; fruit injured by drought and springs low, Litchfield, Mich., 21st; month dry, vegetation scorched, Minneapolis, Minn.; rain needed for corn and cotton crops, Brookhaven, Miss., 31st; crops much damaged by droughts, Richmond, Neb., 31st; drought until 20th, Auburn, N. H.; drought from June 20th to July 22d, Newark, N. J.; drought to 29th, New Germantown, N. J.; very little rain from June 5th to July 23d, Brookhaven, N. Y.; drought very severe at North Hammond, N. Y., 17th; at Kensico, N. Y., crops suffering for rain first part of month; Stapleton, drought June 21st to July 11th; Flushing, N. Y., no rain until 10th; Farmingdale, N. Y., drought until 30th; Nottaway, Va., drought until 10th; Lynchburg, Va., drought very severe, from June 25th to July 28th; Newport, R. I., drought until 23d.

Hail.—2nd, Mendon, Mass.; Ringgold, Ohio; 3rd, Afton, Iowa; 4th, DeSoto, Neb.; 6th, Rockford, Iowa; 7th, Mt. Auburn, Ohio; 9th, Middletown and New London, Conn.; 13th, Richmond, Neb., Le Roy, Wis., Pike's Peak; 14th, Shelburne, N. H.; Pike's Peak, 17th, near Nora Springs, Iowa, Genoa, Neb.; 18th, 22nd and 23d, Pike's Peak; 25th, Buffalo, Rochester and Denver; 26th, Cornish, Me., Pike's Peak; 28th, Afton, Iowa; 29th, Durham, Ark., Purdy, Tenn.

RELATIVE HUMIDITY.

The relative humidity, as reported from the Signal Service stations, averages from 68 to 82 per cent. at the stations on the New Jersey and New England coasts; from 61 to 71 at the stations in the interior of the Middle and Eastern States; from 65 to 77 in the Southern States and Ohio valley; from 68 to 78 in the Lake region; and from 65 to 75 in the Upper Mississippi and Lower Missouri valleys. It is, as usual, lowest on the western plains and the Rocky mountains, being 54 at Bismarck, Dak., and North Platte, Neb., 48 at Colorado Springs, 39 at Denver, 35 at Cheyenne, and 30 at Salt Lake City. The mean of Pike's Peak is 78 and that of Mt. Washington 90.

WINDS.

Prevailing Winds.—The prevailing winds for the month are shown by the arrows on Chart No. II. They have been mostly from the south or southeast in the Gulf States, and Lower Missouri valley; from the south or southwest in the South Atlantic States, Tennessee, the Ohio valley and New England, but have been more variable in the Middle States, the Lake region and the Upper Mississippi valley.

Total Movements of the Wind.—At the Signal Service Stations, the largest monthly movements are, as follows: Mt. Washington, 23,762 miles; North Platte, 12,242; Cape Lookout, 12,020; Dodge City, 11,311; Fort Sully, 10,173; Breckenridge, 9,993; Pike's Peak, 9,456. The smallest total movements are: Wytheville, 2,025 miles; Lynchburg, 2,244; Augusta, 2,320; Nashville, 2,569; Burlington, Vt., 2,739; Shreveport, 2,837; Vicksburg, 2,851. These figures plainly indicate a region of very high winds in the western portions of Kansas, Nebraska, Minnesota, and southwestern Dakota, and an extensive region of light winds in the interior of the Southern States.

Highest Winds.—Among the highest wind-velocities reported from the Signal Stations are the following: Bismarck, 19th, NW., 56 miles per hour; Buffalo, 5th, SW., 60; Breckenridge, 44; Cape May, 4th, W., 48; Denison, 8th, 40; Dodge City, 3rd, S., 46; Escanaba, 56; Fort Sully, 4th, 54; Indianola, 14th, 55; Mt. Washington, 84; North Platte, 7th, 57; Pike's Peak, 8th, 50; Philadelphia, 20th, 40; Port Huron, 5th, 46; St. Paul, 6th, 54; Sandy Hook, 11th, NW., 50; Toledo, 5th, 40.

High Winds generally attending thunder-storms are also reported by Voluntary Observers as follows: Fort Madison, Iowa, damaging wind-storms, 3rd; Ames, Iowa, severe wind-storm, 4th; Stanly, Kansas, severe and destructive storms of wind and rain, 28th; Fallston, Md., severe wind-storm, 11th; Carthage, Ohio, 20th; Newport, Vt., strong gales, 20th; Neillsville, Wis., severe wind-storm, 17th.

Tornadoes occurred at Spiceland, Ind., blowing down trees, &c., 4th; Nottaway and Norfolk, Va., 13th. A *whirlwind*, with a storm of grasshoppers, was observed on Pike's Peak on the 11th.

VERIFICATIONS.

Probabilities.—The usual comparison of the tri-daily Probabilities, with the data contained in the three succeeding reports, gives 86.4 as the general average percentage of verifications. The percentage for each district is as follows: New England, 86.2; Middle States, 87.4; South Atlantic, 84.3; Eastern Gulf, 88.2; Western Gulf, 90.3; Lower Lakes, 87.8; Upper Lakes, 83.9; Tennessee and the Ohio valley, 83.2; Upper Mississippi valley, 88.7; Lower Missouri valley, 85.5. The percentage of verifications for each element is as follows: weather, 92.4; winds, 88; temperature, 86.1; barometer, 78.

The observer at Nashville reports that the storm of the 21st, caused dangerous floods in the small streams of the vicinity, and that warning was given by the "Farmer's Bulletin" which enabled the farmers to secure exposed grain and other property.

Cautionary Signals.—Forty-three Cautionary Signals were displayed at the regular Signal Service Stations, of which twenty-three were justified by the occurrence of dangerous winds at or near the stations. Signals were ordered for the severe storm of the 4th and 5th, on the Middle Atlantic and New England coasts, but were not ordered for the stations on Lakes Erie, Michigan and Huron.

NAVIGATION.

The stage of water.—The highest and lowest readings on the Signal Service river gauges are given in the table on chart No. III. In the Red river, at Shreveport, the highest reading, 29 ft. 5 in., is four inches below the "danger line" of the Signal Service gauge, which occurred on the 28th. Dangerous floods occurred above this point, injuring the cotton crop; and the Observer at that station reports on the 22d, that the heavy rise during the last day of the week came out of the lakes of that vicinity, while the river above was falling. The Mississippi was highest at Vicksburg on the 23d, when it was 40 ft., or 1 foot below the "danger line." The upper Mississippi declined during the entire month, and was lowest on the 31st. The Missouri was highest at Leavenworth on the 6th, and lowest on the 31st. Freshets occurred in the Upper Ohio, near Pittsburgh, in the Des Moines, near Keokuk, and in the Yazoo, near Vicksburg. The observer at Portland, Or., reports that "the river, which at the commencement of the month was in the streets of Portland, has fallen quite rapidly and is now about fifteen feet below high water mark."

WATER TEMPERATURES.

A table at the lower right-hand corner of the chart, No. II, gives the maximum and minimum temperatures of water as observed at the stations named, the third column gives the depth at which the observations were taken. The range of temperature was greatest at Duluth, 26°; Memphis, 23°; and least at Jacksonville, 3°; Mobile and Eastport, 4°. The average temperature of water on the Gulf and South Atlantic coasts was slightly above the mean temperature of the air, while on the Middle Atlantic and New England coast it was slightly below the temperature of the air.

ATMOSPHERIC ELECTRICITY.

Auroras—have been observed on the following dates—that of the 16th being generally visible in the northern sections of the country, extending from Maine to Iowa; the reports are as follows: 8th, Litchfield, Mich.; 10th, Afton, Iowa; 12th, and 15th, Duluth; 16th, Detroit, Oswego, Port Huron, Rochester, Mt. Washington, La Crosse, Springfield, Marquette, Alpena, Grand Haven, Coresco, Iowa, Gardiner, Me., Auburn, N. H., Manitowoc, Wis.; 17th, Duluth, Gardiner, Me.; 18th, Malone, St. Paul, Escanaba, Marquette, Alpena, Minneapolis, Minn.; 19th, Alpena, Gardiner, Me.; 20th, St. Paul; 21st, St. Paul; 23rd, Fort Pembina; 25th, Malone, Gardiner, Me.; 29th, Boston, Rochester, Marquette, Dodge City, Breckenridge; 30th, Rochester; 31st, Rochester, South Hartford, N. Y.

Thunder and Lightning.—Local storms, accompanied by thunder or lightning, occurred in all the districts, and in a number of cases were destructive to property and life. Electrical displays were more numerous between latitudes 36° and 46°. Chronologically arranged, the reports are as follows: 1st, Fla.,